

### **Remarks**

Claims 21-37 are pending in the present application and are rejected.

Claim 21 is amended to explain that the resin surrounds the elastomeric portion(s) "on all sides where interconnect(s) are present." The antecedent basis for this amendment is found in the Specification on page 8, ll. 11-14.

New claims 38-40 are presented for Examination. These claims are proposed in response to the Examiner's statement:

With respect to the argued limitation of "curable resins", note curable resins are not limited to thermosetting resins. Thus the Bauer reference is pertinent and remains applied. Note further, applicant has not recited in the rejected claim(s) the limitation of "thermoset" resins, and although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

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Accordingly, new claims 38-40 incorporate the fact that the encapsulating resin is a thermoset resin.

#### **1. Rejections Under 35 U.S.C. §102(b)**

Claims 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by admitted prior art as set forth on pages 1-3 of the instant specification.

The Examiner's analysis in support of the present invention is conspicuously deficient in its failure to consider the encapsulation step of the present invention. Independent claim 21 includes a step of "encapsulating said elastomeric portion(s) and said interconnect(s) with a curable resin which exhibits volumetric contraction upon curing, said resin surrounding said elastomer portion and at least a portion of said substrate." The alleged admitted prior art

fails to include such encapsulation. Moreover, claim 21 is amended to further differentiate the prior art by explaining that in the encapsulating step an encapsulant is formed that surrounds the elastomeric portion(s) "on all sides where interconnect(s) are present." Claims 34-37 depend from claim 21 and therefore the microfluidic devices of these claims necessarily include an encapsulant surrounding the elastomeric portion(s) "on all sides where interconnect(s) are present." Since such an encapsulant is lacking in the alleged prior art, claims 34-37 are allowable under 35 U.S.C. 102(b) as being anticipated by admitted prior art as set forth on pages 1-3 of the instant specification.

**2. Rejections Under 35 U.S.C. §103(a)**

Claims 21-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as set forth on pages 1-3 of the present specification, in view of Bauer (U.S. Pat. No. 4,304,749 ).

Applicants have explained that the alleged prior art does not teach the encapsulation of independent claim 21. Similarly Bauer does not teach such an encapsulation. It is ambiguous as to whether or not Bauer teaches any type of encapsulation. The Examiner states with regard to Bauer:

The added secondary reference teaches as conventional the feature of forming a fluidic structure using a polymeric material that does not require baking, having contracting properties as claimed. A cover 23 and substrate 23 are provided adjacent one another such that there is provided a fluid passage there between. A thermoset plastic resin is injected into the mold cavity to encapsulate the assembly, such that it contracts upon solidification. See col. 5, lines 1-15.

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Although the Examiner states that Bauer describes an encapsulation, review of the passage relied upon reveals that this is not the case. The cited passage states:

. . .which include an injection inlet opening 84. When plastic is injected into opening 84 it flows through and fills channels 81 and holes 78 and 79. Upon solidifying the plastic in the holes applies a shrinkage stress compression force which holds the body member and cover plate together. In this regard it is noted that the wide-to-narrow configuration of holes 78, 79 permits the **solidified plastic therein to act like a rivet in joining the two elements together**. Aiding this function is the expansion of collar 80 against the walls of hole 78 by the solidifying plastic. The final assembly (as seen in FIG. 8) is a compact one piece unit sealed by a simple plastic injection step

Bauer, col 5, 1-15 (emphasis added).

Clearly, the passage relied upon by the Examiner does not describe an encapsulation. Instead, this passage describes a configuration in which two elements are held together by a rivet-like process. Webster-Merriam Online Dictionary provides the following definition for encapsulate- “1 : to enclose in or as if in a capsule <a pilot encapsulated in the cockpit>.” ([www.m-w.com](http://www.m-w.com)). Independent claim 21 as amended precisely explains the extent of the encapsulation - “said resin surrounding said elastomer portion and at least a portion of said substrate such that said elastomeric portion(s) are surrounded by resin on all sides where interconnect(s) are present.” None of the methods for binding the elements of the fluidic device of Bauer together provide such an encapsulation. In particular, neither the alleged admitted prior art nor Bauer describe a fluidic device with interconnects such that an elastomer is surrounded by an encapsulate on all sides where such interconnects are present.

Accordingly, for at least this reason claims 21-33 are allowable under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art as set forth on pages 1-3 of the present specification, in view of Bauer (U.S. Pat. No. 4,304,749 ).

### Conclusion

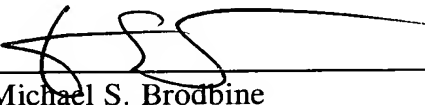
Applicants have made a genuine effort to respond to each of the Examiner's rejections in advancing the prosecution of this case. Applicants believe that all formal and

substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If a telephone or video conference would help expedite allowance or resolve any additional questions, such a conference is invited at the Examiner's convenience.

Respectfully submitted,

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